What is claimed is:

1. A method for energy conversion, the method comprising:
(a) introducing a working medium into a compression chamber characterized by a first volume value;
(b) controllably reducing the volume of the working medium to a second volume value thereby compressing the working medium;
(c) combining a fuel medium with the compressed working medium thereby obtaining a combustible mixture of the fuel medium and the compressed working medium, the mixture characterized by a third volume value;
(d) combusting the mixture to produce a volume of combustion by-products; and
(e) maintaining the volum e of combustion by-products generated during combustion of the mixture at or below the third volume value.

2. The method of claim 1 further comprising, after step (e), increasing the volume of the combustion by-products to a fourth volume value, the fourth volume value exceeding the first volume value.

3. The method of claim 2 wherein the step of increasing the volume of the combustion by-products comprises transferring the combustion by-products to an expansion chamber characterized by the fourth volume value.

4. The method of claim 1 wherein the working medium is selected from the group consisting of air and noncombustible mixture of air and fuel medium.

5. The method of claim 1 wherein step (b) further comprises adjusting temperature of the working medium so that the working medium is compressed substantially isothermally.

6. The method of claim 5 wherein at least one of step (b) and step (c) comprises adding a fluid medium to the working medium.

7. The method of claim 6 wherein the fluid medium comprises water.

8. The method of claim 7, further comprising, after step (d), reducing temperature of the combustion by-products while increasing heat of combustion of the fuel medium prior to combining thereof with the compressed working medium.

9. The method of claim 1 wherein the second volume value equals the third volume value.

10. The method of claim 9 wherein step (b) comprises transferring the working medium to a combustion chamber characterized by the third volume value.

11. The method of claim 1, wherein step (d) comprises igniting the mixture of the fuel medium and the compressed working medium.

12. The method of claim 1 wherein step (e) comprises reducing the volume of the combustion by-products.

13. The method of claim 12 wherein step (e) comprises adding a fluid medium to the volume of combustion by-products.

14. The method of claim 13 wherein the fluid medium comprises water and the working medium is selected from the group consisting of air and noncombustible mixture of air and fuel medium.

15. An internal combustion engine comprising:
(a) a first housing at least partially defining a compression chamber for reducing volume of a working medium introduced thereto;
(b) a second housing at least partially disposed within the first housing and defining at least one combustion chamber in periodic communication with the compression chamber for receiving the working medium therefrom;
(c) a means for introducing a fuel medium into the com bustion chamber; and
(d) a third housing at least partially defining an expander chamber in periodic communication with the combustion chamber for increasing volume of by-products generated during combustion of the fuel medium mixed with the working medium in the combustion chamber.

16. The engine of claim 15, further comprising a first movable member at least partially disposed within the compression chamber for directing the working medium into the combustion chamber.

17. The engine of claim 16 wherein the first movable member defines at least two subchambers within the compression chamber, the subchambers characterized by a variable volume.

18. The engine of claim 16 wherein the first movable member is selected from the group consisting of: a rotatable piston, a reciprocal piston, and a recip-rotating piston.

19. The engine of claim 16 wherein at least one of the second housing and the first movable member comprises means for controllably sealing the combustion chamber.

20. The engine of claim 16, further comprising a first drive mechanism mechanically coupled to the first movable member.

21. The engine of claim 15, further comprising a means for introducing a fluid medium into at least one of the compression chamber, the combustion chamber, and the expander chamber.

22. The engine of claim 21, further comprising a heat exchanger for recovering the fluid medium from the expander chamber and for increasing heat of combustion of the fuel medium prior to introduction thereof to the combustion chamber.

23. The engine of claim 15, further comprising a second movable member disposed at least partially within the expander chamber, the second movable member reacting against the by-products entering from the expander chamber.

24. The engine of claim 23 wherein the second movable member defines at least two subchambers within the expander chamber, the subchambers characterized by a variable volume.

25. The engine of claim 24 wherein the second movable member is selected from the group consisting of: a rotatable piston, a reciprocal piston, and a recip-rotating piston.

26. The engine of claim 24, further comprising a second drive mechanism mechanically coupled to the second movable member.

27. The engine of claim 15 wherein the second housing is rotatable in relation to at least one of the first housing and the third housing.

28. The engine of claim 15 wherein the first housing and third housing comprising a unitary housing structure.

29. The engine of claim 15 wherein the compression chamber and the expander chamber comprise a single chamber characterized by a variable volume.

30. An internal combustion engine comprising:

(a) a first housing at least partially defining a compression chamber for reducing volume of a working medium introduced thereto;

(b) a first movable member at least partially disposed within the compression chamber for directing the working medium into the combustion chamber;

(c) a second housing at least partially disposed within the first housing and defining at least one combustion chamber in periodic communication with the compression chamber for receiving the working medium therefrom;

(d) a means for introducing a fuel medium into the combustion chamber;

(e) a third housing at least partially defining an expander chamber in periodic communication with the combustion chamber for increasing volume of by-products generated during combustion of the fuel medium mixed with the working medium in the combustion chamber; and

(f) a second movable member disposed at least partially within the expander chamber, the second movable member reacting against the by-products entering from the expander chamber, at least one the first housing, the second housing, the first movable member and the second movable member defines at least one fluidic diode for controllably sealing at least one of the compression chamber, combustion chamber, and the expander chamber.

31. The engine of claim 30, further comprising a sealing fluid unidirectionally movable through the at least one fluidic diode.

32. A structure having a controllably sealable chamber, the structure comprising:

(a) a housing member having an interior surface defining the chamber; and

(b) an inner member at least partially disposed within the chamber, the inner member having an outer surface and, at least one of the housing member and the inner member being movable such that the housing member and the inner member are movable relative to each other in such as way that at least a first portion of the outer surface of the inner member is disposable proximate to a first portion of the interior surface, at least one of

the first portion of the outer surface of the inner member and the first portion of the interior surface of the housing member defining at least one fluidic diode.

33. The structure of claim 32, further comprising a sealing fluid unidirectionally movable through the at least one fluidic diode.

34. An improved method for operating an internal combustion engine of the four-stroke variable volume type and having a compression stroke for compressing a working medium and a power stroke, wherein the improvement comprises:
causing the compression stroke to produce a pressure of the working medium that would cause auto-ignition when fuel is added to it, and refraining from introducing substantial fuel into the working medium during the compression stroke until substantially maximum pressure of the working medium has been reached and utilizing at least one of the following processes:
(a) causing combustion of fuel under substantially constant volume conditions; and
(b) causing the power stroke to provide a larger volume to combustion products than the compression stroke provides to the working medium.

35. An improved method according to claim 34, wherein the improvement further comprises utilizing both processes (a) and (b).

36. An improved method according to claim 34, wherein the power stroke is implemented with a non-reciprocating member.